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Notice of Allowability	Application No.	Applicant(s)	
	09/543,125	HANNIGAN, BRETT T.	
	Examiner	Art Unit	
	Daniel A. Hess	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/4/06 interview with Applicant.
2. ☒ The allowed claim(s) is/are 4-9, 14, 18 and 20-24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>041706</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|---|--|

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EXAMINER'S AMENDMENT / ALLOWANCE

This action follows a pre-appeal conference, which led to an interview with the Applicant on 4/4/2006. In that interview, the Examiner indicated that some of the claims that had previously been indicated as rejected could be allowable if restated in Independent form. Other claims would remain rejected. The Applicant agreed to make certain changes, and cancel claims that would remain rejected.

Remarks on Restriction Requirement

The Examiner maintains the restriction requirement on claims 25-32. These method claims follow steps that do not need to be followed for apparatus claims that have been presented.

The Applicant agreed in the 4/4/2006 interview to cancel the above claims.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. William Conwell on 4/4/2006.

The application has been amended as follows:

IN THE CLAIMS

1-3. (Cancelled)

4. (Currently Amended) ~~The scanner of claim 3 in which said~~ In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into signal scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said software instructions cause the CPU to process data from the 2D sensor arrays for a purpose in addition to sensing scanner motion, wherein said additional purpose includes beginning a watermark detection process before data from the linear sensor array is finally processed.

5. (Currently Amended) The scanner of claim 4 in which said additional purpose includes beginning to sense a watermark calibration signal

6. (Currently Amended) ~~The scanner of claim 3 in which said~~ In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as

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motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into signal scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said software instructions cause the CPU to process data from the 2D sensor arrays for a purpose in addition to sensing scanner motion, wherein said additional purpose includes identifying portions of the data collected by the linear sensor array that are relatively more likely to include detectable identifier data.

7. (Currently Amended) ~~The scanner of claim 3 in which said~~ In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into signal scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said software instructions cause the CPU to process data from the 2D sensor arrays for a purpose in addition to sensing scanner motion, wherein said additional purpose is to quantify includes quantifying an object surface characteristic, wherein a filter can be applied to said scan data in accordance therewith.

8. (Currently Amended) ~~The scanner of claim 3 in which said~~ In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as

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motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into signal scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said software instructions cause the CPU to process data from the 2D sensor arrays for a purpose in addition to sensing scanner motion, wherein said additional purpose is to assess includes assessing relative distance to the object from different portions of the scanner.

9. (Currently Amended) ~~The scanner of claim 3 in which said~~ In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into signal scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said software instructions cause the CPU to process data from the 2D sensor arrays for a purpose in addition to sensing scanner motion, wherein said additional purpose is to quantify includes quantifying an affine distortion in the scan data, so that compensation may be applied therefor.

10-13. (Cancelled)

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14. (Currently Amended) ~~The scanner of claim 13 in which the first technique comprises examining said scan~~ In an apparatus comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the apparatus producing sensor data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the sensor data, an improvement wherein the program instructions further cause the CPU to examine said sensor data for the presence of a calibration signal by which information about the scale or rotation of steganographic watermark data can be determined.

15-17. (Cancelled)

18. (Currently Amended) ~~The scanner of claim 16 wherein the first technique comprises examining said scan data to determine~~ In an apparatus comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the apparatus producing sensor data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the sensor data, an improvement wherein the program instructions further cause the CPU to:

employ a first technique to examine said sensor data for attribute information useful in guiding possible subsequent decoding of the sensor data to discern plural-bit steganographic watermark information therefrom, said attribute information comprising physical texture information; and

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employ a second technique to attempt to decode plural-bits of steganographic watermark information from said sensor data, said second technique being determined at least in part by said attribute information.

19. (Cancelled)

20. (Currently Amended) ~~The scanner of claim 19~~

In an apparatus comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the apparatus producing sensor data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the sensor data, an improvement wherein the program instructions further cause the CPU to:

employ a first technique to identify one or more portions of said sensor data that appear most promising for decoding steganographic watermark data therefrom, wherein the said first technique comprises identifying a portion of said ~~sean~~sensor data that is sampled at a higher sampling rate than other portions.

21. (Currently Amended) ~~In a scanner~~ an apparatus comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the ~~scanner~~ apparatus producing ~~sean~~ sensor data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the ~~sean~~ sensor data, an improvement wherein:

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the ~~scanner apparatus~~ comprises two spaced-apart multi-element sensor arrays, operating simultaneously rather than alternately; and said program instructions cause said CPU to exploit, in a binocular fashion, the different views of an object being ~~scanned~~ sensed to improve the decoding of information from said ~~scan~~ sensor data.

22. (Currently Amended) ~~The scanner of claim 21~~ In an apparatus comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the apparatus producing sensor data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the sensor data, an improvement wherein:

the apparatus comprises two spaced-apart multi-element sensor arrays; and
said program instructions cause said CPU to exploit the different views of an object being sensed to improve the decoding of information from said sensor data;

wherein said program instructions cause the CPU to determine an optically-sensed attribute corresponding to each of the spaced-apart multi-element sensor arrays, and to use said attribute in determining a compensation to be applied to said ~~scan~~ sensor data prior to decoding of the information therefrom.

23. (Currently Amended) ~~The scanner of claim 21~~

In an apparatus comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the apparatus producing sensor data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at

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least in part, in accordance with information decoded from the sensor data, an improvement wherein:

the apparatus comprises two spaced-apart multi-element sensor arrays; and
said program instructions cause said CPU to exploit the different views of an object
being sensed to improve the decoding of information from said sensor data;

wherein said program instructions cause the CPU to attempt to decode plural-bit steganographic watermark information from said ~~sean~~sensor data, exploiting said different views.

24. (Currently Amended) The ~~scanner~~apparatus of claim 23 wherein said program instructions cause said CPU to sense calibration signals in ~~sean~~sensor data corresponding to each of said spaced-apart sensors, to determine a compensation to be applied to said ~~sean~~sensor data before attempting to decode the plural-bit steganographic watermark information therefrom.

25-34. (Cancelled)

Allowable Subject Matter

Claims 4-9, 14, 18 and 20-24 are allowed.

The following is an examiner's statement of reasons for allowance:

Re claims 4-9: The prior art fails to teach or fairly suggest, in a scanner having all of the features recited in the Jepson portion of the claim, using the recited 2D sensor arrays for one of

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the recited purposes of in addition to the purpose of sensing motion. While the first purpose may individually be taught (i.e. it is admittedly known) and the second purpose alone may be taught, the teaching of both purposes together using the same sensors of the same scanner is not considered to be taught or rendered obvious.

For the other claims, the prior art also fails to teach or render obvious the improvement of the admitted sensor to perform the claimed functionality in addition to the functionality it already performs. Some of these claims are restatements in independent form of subject matter which has already been indicated as allowable and are allowed for reasons already given in earlier actions.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

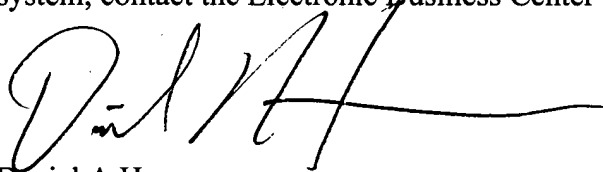
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A. Hess whose telephone number is (571) 272-2392. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel A. Hess
Examiner
Art Unit 2876


STEVEN S. PAK
PRIMARY EXAMINER

4/17/2006